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(71) Applicant(s)

Batts Inc

(Incorporated in USA - Michigan)

200 North Franklin, Zeeland, Michigan 49464,  
United States of America

(72) Inventor(s)

Judd F Garrison

(51) INT CL<sup>6</sup>  
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GB 2242122 A US 4586637 A US 4160516 A  
US 4026446 A(58) Field of Search  
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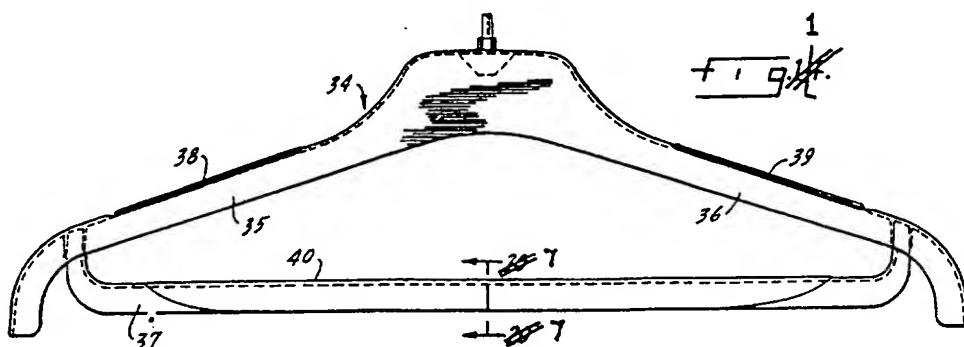
(74) Agent and/or Address for Service

Bromhead &amp; Co

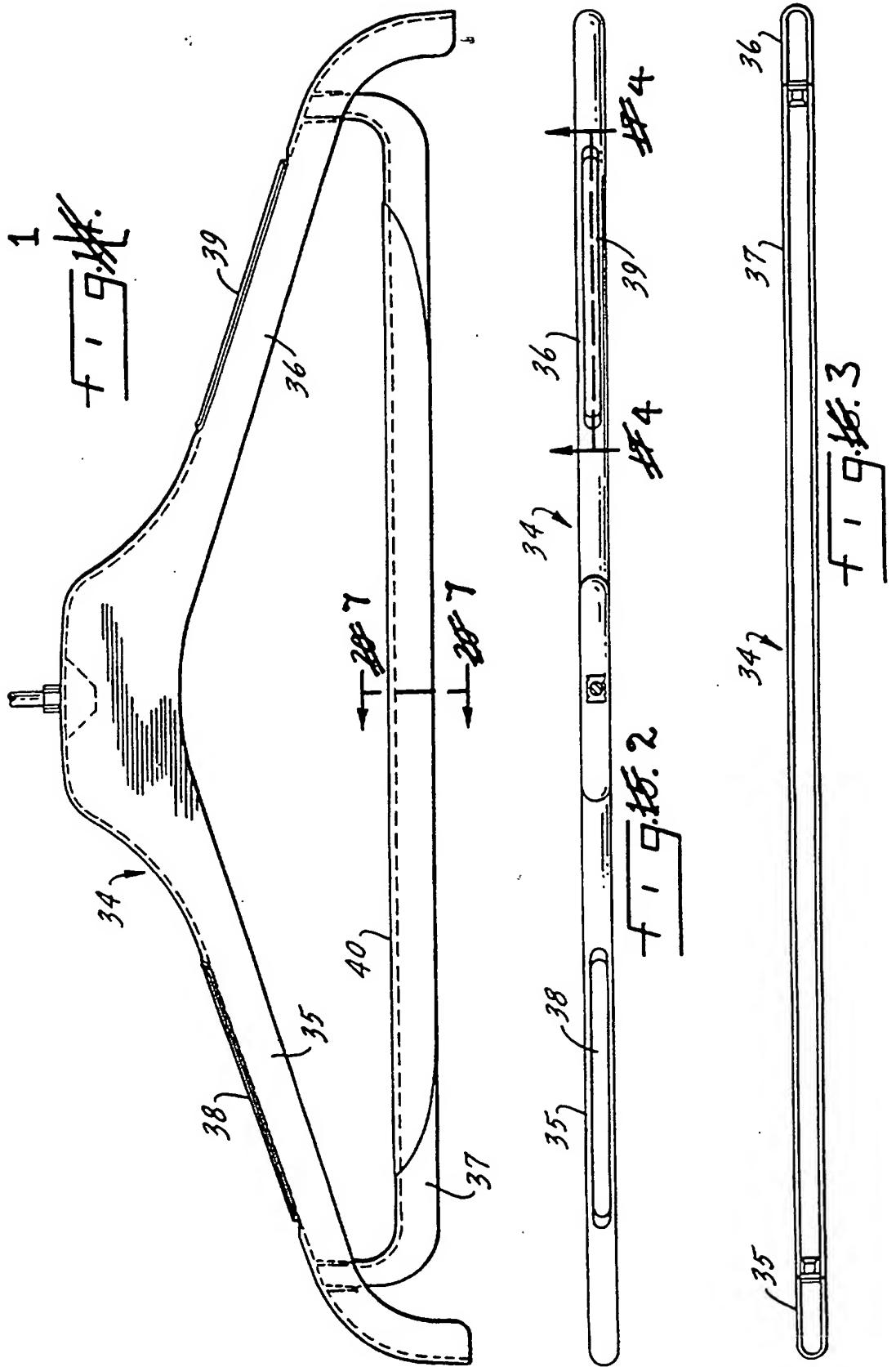
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## (54) NON-SLIP GARMENT HANGER

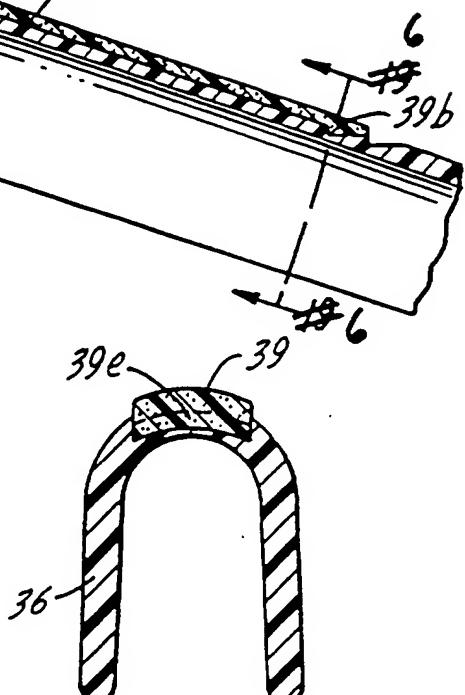
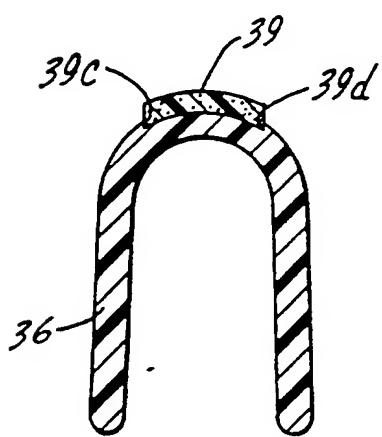
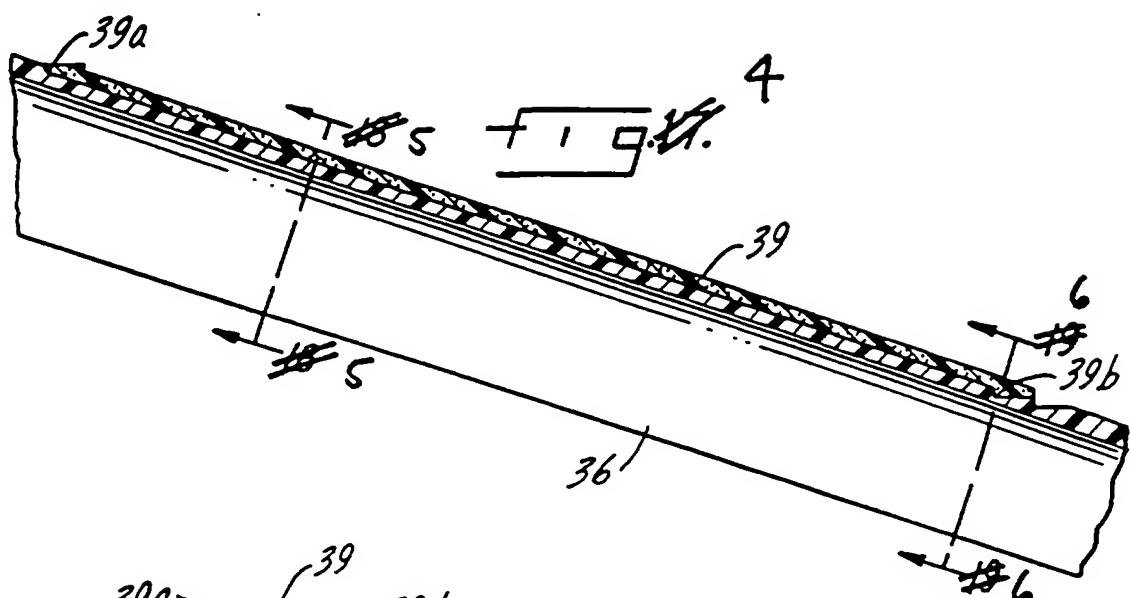
(57) A garment hanger is provided with a coating 38, 39, 40 of resilient friction material on its upper surface and optionally on a pants bar to provide non-slip surfaces for garments such as coats, shirts, blouses and dresses and help prevent the garments from falling off the garment hanger and on to the floor. The improved resilient friction material comprises a block copolymer having discreet block segments of styrene monomer units and rubber monomer units.



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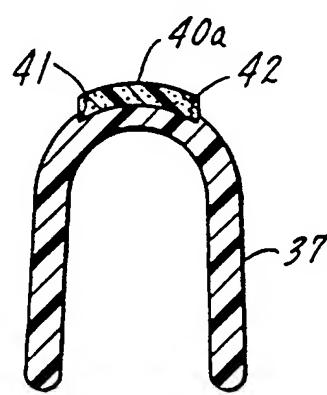
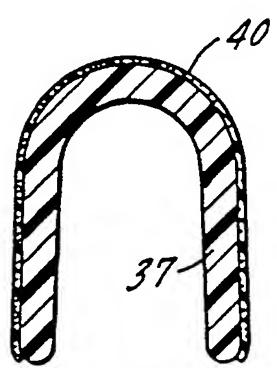


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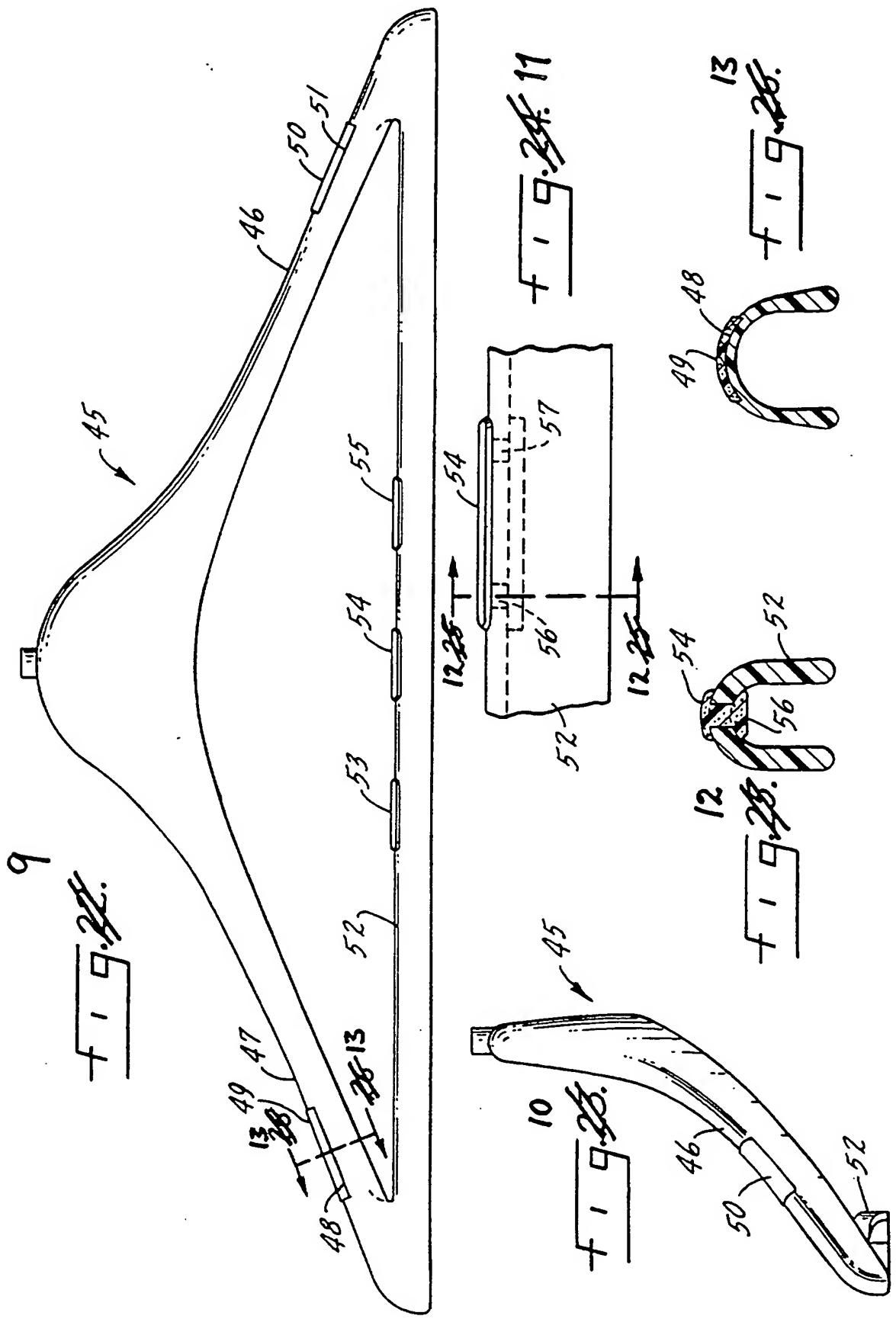
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f 1 g. 26. 7

f 1 g. 26. 8

$\frac{63}{63}$



## NON-SLIP HANGER AND METHOD OF MANUFACTURE THEREOF

This invention relates generally to garment hangers and specifically to such hangers which include a resilient friction material attached to the upwardly facing surfaces of the garment hanger to provide a non-slip surface for receiving the garment and to prevent by friction the garment from falling off the garment hanger.

BACKGROUND OF THE INVENTION

A common problem associated with today's garment hangers is that the garments slip off the hanger and fall to the floor. This problem is particularly annoying to a consumer who places a relatively expensive and fragile garment, such as a business suit, on a garment hanger with a fairly slippery upper surface. The slacks, skirt and/or coat often falls to the floor and becomes wrinkled, thereby requiring ironing or dry cleaning. It is also annoying to the manufacturers of garments who ship the completed garments on garment hangers to retail establishments only to have the garments fall off of the hangers during transit. By the same token, retailers are very particular about product presentation and will not tolerate garment hangers which permit the garments to fall to the floor.

There have been several attempts to remedy this situation. Specifically, garment hangers with upwardly protruding nipples, ridges, cleats or button-like projections are well known. However, none of these designs acceptably grips the garments because the various gripping means, such as cleats, are made from the same hard, slippery material used to fabricate the rest of the body of the garment hanger. The weight of the garment alone against the upward protrusions does not provide enough friction to keep the garment from falling to the floor. This is especially true with lightweight women's apparel; the downward force of lightweight garments on the garment hanger and/or gripping means does not provide enough friction to keep the

lightweight garment from falling to the floor.

Yet another strategy to solve this problem has been to fabricate the gripping means or upward protrusions out of a resilient material, such as rubber, as opposed to the hard material used to fabricate the body of the garment hanger. This strategy suffers from the above-mentioned shortcomings too because conventional rubber is a fairly hard substance and does not grip lightweight garments well. The force of gravity on a lightweight garment does not generate enough friction between the garment and the conventional rubber gripping means to keep the garment from falling to the floor.

Hence, there is a need for a new garment hanger which will positively grip a garment under the garment's own weight. The hanger must be able to grip the garment without either marking or adhering to the garment fabric. Further, because the hanger must be capable of use as shipping hangers by clothing manufacturers, the hanger must be able to maintain its gripping ability under a wide range of temperatures and rough handling resulting from the shocks and bumps to which such hangers are exposed during shipment. Finally, the dissimilar components of the hanger must be easily bonded to one another.

This invention provides a solution to all of the above-mentioned problems and satisfies all of the above criteria. The family of resilient materials identified provides positive gripping action for lightweight and heavyweight garments alike. The family of materials also provides excellent gripping ability in both cold and hot environments. The materials are smooth to the touch and do not mark the garments. Finally, they adhere easily to conventional plastic garment hangers.

#### BRIEF DESCRIPTION OF THE INVENTION

From one aspect, the present invention is directed to a garment hanger of the type in which a contoured garment support member is arranged to receive and suspend a garment

in contact with upper surfaces of the garment support member, the garment hanger including a garment support member which includes a hang means located at about the centre of the garment support member and which has upper surfaces located on both sides of the hang means for contact with a garment, in which :

- (a) a resilient friction material is carried by the upper surfaces of the garment support member to provide a non-slip surface to receive the garment and help prevent the garment from falling off the garment hanger;
- (b) the resilient friction material comprises a block copolymer having discreet block segments of styrene monomer units and rubber monomer units; and
- (c) the resilient friction material is carried by grooves in the upper surfaces of the garment support member and/or by grooves in the upper surfaces of a pant bar forming part of the hanger.
- Other aspects of the invention are claimed in independent claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is illustrated diagrammatically in the accompanying drawings, wherein :

Figure 1 shows one embodiment of garment hanger made in accordance with this invention, in this instance, with a pant attachment;

Figure 2 is a top plan view of the garment hanger shown in Figure 1;

Figure 3 is a bottom plan view of the garment hanger shown in Figure 1;

Figure 4 is a section taken substantially along line 4-4 in Figure 2;

Figure 5 is a section taken substantially along line 5-5 in Figure 4;

Figure 6 is a section taken substantially along line 6-6 in Figure 4;

Figure 7 is a section taken substantially along line 7-7 in Figure 1;

Figure 8 is an alternative configuration to the sectional view shown in Figure 7;

5       Figure 9 is yet another embodiment of a garment hanger made in accordance with this invention, in this instance, providing a pant hanger;

10      Figure 10 is a right side view of the hanger depicted in Figure 9;

Figure 11 is an expanded view of the resilient pad shown in Figure 9;

Figure 12 is a section to an enlarged scale taken substantially along line 12-12 in Figure 11; and

15      Figure 13 is a section to an enlarged scale taken substantially along line 13-13 in Figure 9.

DETAILED DESCRIPTION OF THE INVENTION

Like reference numerals will be used to refer to like or similar parts from Figure to Figure in the following description of the drawings.

20      Referring first to Figures 1-3, resilient material is coated on a curved garment hanger 34 at shoulder areas 35 and 36 as well as on a pant or skirt bar 37. A relatively thin coating 38 or 39 applied to the shoulder areas 35 or 36 will ensure that a jacket, blouse or dress will stay on the hanger 34 and not fall to the floor. Further, a thin coating 40 applied to pant bar 37 will keep the trousers on the pant bar 37 and off the floor.

30      Figure 4 is a side view of shoulder area 36 illustrating the relative thickness of resilient material 39 to be applied to the shoulder area 36 and the structural securing between the resilient material 39 and the shoulder area 36 provided by recessed shoulders 39a and 39b. Figures 5 and 6 show the relative thicknesses of the resilient material 39 in the middle and at the end of the shoulder area 36 respectively and the additional structural securing derived from the abutment shoulders 39c, 39d and

39e.

Figure 7 illustrates a cross-section of the pant bar 37 with resilient material 40 applied thereto and provides an indication of the area of abutment of the resilient material 40 against the pant bar 37. Figure 8 shows an alternative method of attaching the resilient material 40a to the pant bar 37 which is analogous to the method shown in Figures 5 and 6. The pant bar 37 may include a groove including abutment shoulders 41 and 42 to provide structural securement of the resilient material 40a.

Figure 9 illustrates a different arrangement for applying the resilient material to a contoured garment coat/pant hanger 45. Shoulder section 47 includes a groove or recess 48 (see Figure 13) and a coating of resilient material 49 is laid therein. Similarly, shoulder section 46 includes a groove 51 filled with resilient material 50. The pant bar 52 includes three pairs of slots 56 and 57 (see Figure 11) so that resilient pads 53, 54, and 55 may be plug-moulded on to pant bar 52. One set of such slots is illustrated in Figure 11 at 56 and 57. A sectional view of the plug-moulded pad is illustrated in Figure 12. In this construction, the need for separate securement means, and the added time during the manufacturing process to add the securement means, is eliminated, the structural interlock ensuring adherence of the resilient material to the pant bar.

The resilient friction materials best suited for frictionally engaging a garment on to a garment hanger are block copolymers having discrete block segments of styrene monomer units and rubber monomer units. These materials have the common quality of providing a high coefficient of friction with slippery clothing materials such as silk, rayon and polyester. This family of block copolymers generally breaks down into two types; polymers which include unsaturated rubber monomer units and polymers which include saturated rubber monomer units.

Specific examples of polymers employing unsaturated

rubber monomer units include the most common structure which is linear (A-B-A type). These polymers include styrene-butadiene-styrene (S-B-S) and styrene-isoprene-styrene (S-I-S).

5           The other sub-category of acceptable resilient frictional materials incorporate saturated rubber monomer units. Those compounds include linear styrene-ethylene/butylene-styrene (S-EB-S). In addition to the linear (A-B-A) polymers, there are specialised polymers of the radial  $(A-B)_n$  type. Those polymers include (styrene-butadiene) $_n$ , (S-B) $_n$ , or (styrene-isoprene) $_n$ , (S-I) $_n$ . Further, 10 polymers of the diblock (A-B) type have been found acceptable. Those polymers include styrene-butadiene (S-B), styrene-ethylene/propylene (S-EP), and styrene-ethylene/butylene (S-EB). Each block segment of the above-mentioned polymers may be 100 monomer units or more.

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The preferred resilient friction materials discussed are commercially available from the Shell Chemical Company of Woodstock, Illinois. Specific grades of the preferred 20 resilient material which are usable are G-2706, G-7705, D-3226 and D-2109.

25           Although preferred embodiments of the present invention have been illustrated and described, it will at once be apparent to those skilled in the art that variations may be made within the spirit and scope of the invention. Accordingly, it is intended that the scope of the invention be limited solely by the scope of the hereafter appended claims and not by the specific words in the foregoing description.

CLAIMS

1. A garment hanger of the type in which a contoured garment support member is arranged to receive and suspend a garment in contact with upper surfaces of the garment support member, the garment hanger including a garment support member which includes a hang means located at about the centre of the garment support member and which has upper surfaces located on both sides of the hang means for contact with a garment, in which :
  - 5 10 (a) a resilient friction material is carried by the upper surfaces of the garment support member to provide a non-slip surface to receive the garment and help prevent the garment from falling off the garment hanger;
  - 15 (b) the resilient friction material comprises a block copolymer having discreet block segments of styrene monomer units and rubber monomer units; and
  - (c) the resilient friction material is carried by grooves in the upper surfaces of the garment support member and/or by grooves in the upper surfaces of a pant bar forming part of the hanger.
- 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670 675 680 685 690 695 700 705 710 715 720 725 730 735 740 745 750 755 760 765 770 775 780 785 790 795 800 805 810 815 820 825 830 835 840 845 850 855 860 865 870 875 880 885 890 895 900 905 910 915 920 925

wherein the block copolymer has a diblock (styrene-rubber) structure.

7. The garment hanger of any one of claims 1 to 3, wherein the rubber monomer unit is butadiene, isoprene, ethylene/butylene or ethylene/propylene.

5           8. A method of fabricating an improved garment hanger of the type in which a contoured garment support member is arranged to receive and suspend a garment in contact with upper surfaces of the garment support member, the method comprising :

- 10           (a) providing a garment support member which includes a hang means located at about the centre of the garment support member and a pant bar attached to the underside of the garment support member; and
- 15           (b) coating portions of the upper surfaces of the garment support member and pant bar with a resilient friction material including a block copolymer having discreet block segments of styrene monomer units and rubber monomer units to provide a non-slip surface to receive the garment and pants or skirt and to help prevent the garment and pants or skirt from falling off the garment hanger and on to the floor.

20           9. A garment hanger according to any one of claims 1 to 7 substantially as described herein with reference to any Figure of the accompanying drawings.

25           10. A method according to claim 8 substantially as described herein with reference to any Figure of the accompanying drawings.



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Patent  
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Application No: GB 9607665.8  
Claims searched: 1-10

Examiner: John Graham  
Date of search: 29 April 1996

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): A4L

Int Cl (Ed.6): A47G

Other: ONLINE DATABASE: WPI

**Documents considered to be relevant:**

Category	Identity of document and relevant passage			Relevant to claims
X	GB 2242122 A	(MORPLAN)	whole document	At least claims 1 and 8
X	US 4586637	(LEMEL)	"	"
X	US 4160516	(RICE)	"	"
X	US 4026446	(KESSLER)	"	"

- X Document indicating lack of novelty or inventive step  
Y Document indicating lack of inventive step if combined with one or more other documents of same category.  
& Member of the same patent family
- A Document indicating technological background and/or state of the art.  
P Document published on or after the declared priority date but before the filing date of this invention.  
E Patent document published on or after, but with priority date earlier than, the filing date of this application.